

Claims

1. A method for determining fluctuating fuel properties ( $H_u$ , ?) during the operation of a power plant,  
5 characterized in that  
an efficiency factor ( $\eta$ ) for the power plant is determined on the basis of current operating parameters ( $P$ ,  $m$ ,  $V$ ,  $p$ ,  $T$ ) of the power plant and a change in the fuel properties ( $H_u$ , ?) is concluded as a result of a change over time in the efficiency  
10 factor ( $\eta$ ) thus determined.

2. The method as claimed in claim 1,  
characterized in that  
one or more elements from the group power rating ( $P$ ) of the  
15 power plant, mass flow ( $m$ ) of the fuel, volume flow ( $V$ ) of the fuel, pressure ( $p$ ) of the fuel, and temperature ( $T$ ) of the fuel are determined as the current operating parameters ( $P$ ,  $m$ ,  $V$ ,  $p$ ,  $T$ ).

20 3. The method as claimed in claim 2,  
characterized in that  
the efficiency ( $\eta$ ) is determined by direct recording of the mass flow ( $m$ ) of the fuel.

25 4. The method as claimed in claim 2,  
characterized in that  
the efficiency is determined by recording the volume flow ( $V$ ), the pressure ( $p$ ) and the temperature ( $T$ ) of the fuel, in particular while leaving out of consideration the real gas  
30 factor ( $z$ ).

5. The method as claimed in claim 2,  
characterized in that

the efficiency is determined by measuring differential pressure ( $\Delta p$ ), pressure ( $p$ ) and temperature ( $T$ ) of the fuel, in particular while ignoring the real gas factor ( $z$ ).

5 6. The method as claimed in one of the claims 1 to 5, characterized in that a change in the mass-related heating value ( $H_{u,m}$ ) of the fuel is concluded as the change in the fuel property ( $H_u$ , ?).

10 7. The method as claimed in one of the claims 1 to 6, characterized in that a change in the volume-related heating value ( $H_{u,v}$ ) of the fuel is concluded as the change in the fuel property ( $H_u$ , ?).

15 8. The method as claimed in one of the claims 1 to 7, characterized in that a change in the Wobbe index ( ) is concluded as the change in the fuel property ( $H_u$ , ?).

20 9. The method as claimed in one of the claims 1 to 8, characterized in that the change over time in the efficiency factor ( $\eta$ ) relative to a reference operating state (0) is determined, in addition to which the heating value ( $H_{u,0}$ ) and/or the standard density ( $\rho_0$ ) of the fuel are determined as  
25 reference variables, the reference variables ( $H_{u,0}$ ;  $\rho_0$ ) being determined in particular by means of a rolling averaging during the operation of the power plant.

10. The method as claimed in one of the claims 1 to 9,  
30 characterized in that the change in the fuel properties ( $H_u$ , ?) is quantified using mathematical methods.